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in the feet, and the professor, who, by the way, had in his earlier days gone partly through the medical course before finally deciding to take up the other branch of science, recognised it as the beginning of the end. The dropsical symptoms disappeared for a time, but during the first week of August the trouble developed alarmingly, and Dr. J. C. Verco was called in to consult with Dr. Hamilton. The tapping method of treatment was applied with considerable success, but the effects of the dropsical attack never left the professor, while kidney and liver trouble also set in. In the end the complication of diseases brought about his death, which took place at his residence, Buxton-street, North Adelaide, on Friday evening, the end being exceedingly peaceful.

Professor Tate was married twice, and his second wife survives him. There are also an unmarried daughter and two sons, Messrs. E. Tate, of Salisbury, and A. R. Tate, who was a member of the Imperial Buffen's Corps, and who was some months ago reported killed, but who was only wounded. Upon recovery from his wound Trooper Tate returned to the front, but was shortly afterwards sent into hospital again. As soon as he became convalescent he again went to the front, and he returned with his comrades in the Britannic at the end of July. Mrs. J. H. Newman, of Prospect, and Mrs. J. McLeod, of Semaphore, are daughters of Professor Tate, and Mr. Ralph Tate, another son, occupies a responsible position in the Forestry Department of New South Wales.

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DEATH OF PROFESSOR TATE.

Widespread regret will be occasioned by the announcement which we publish to-day of the death of Professor Ralph Tate, F.G.S., F.L.S., who has held the position of Professor of Natural Science at the Adelaide University for more than a quarter of a century. The deceased gentleman, who had been ailing for a long time, suffering chiefly from a heart affection, was the son of Mr. Thomas Tate, the author of numerous educational and technical works. He was born at Alnwick, Northumberland, in March, 1840. When he was 12 years old he began the study of geology—a branch of science in which he afterwards gained considerable distinction—under the direction of his uncle, Mr. George Tate, the author of the "History of Alnwick." He subsequently took up the study of mathematical and physical science subjects under his father's tuition, and in 1858 obtained a free exhibition to the Government School of Mines, in London, which carried with it a grant of £80 per annum, tenable for two years.

After conducting geological classes at the Polytechnic Institution for some time he was appointed senior science master in the Trade and Mining School, at Bristol. He subsequently conducted schools of science in the north of Ireland for three years, and in 1864 accepted the office of curator of the Geological Society in London. He had previously been elected a fellow of this society, and during the three and a half years that he was personally associated with its working he conducted public classes in connection with the institution. He was also engaged as teacher of geology and its allied sciences at several large schools in or near London. In the autumn of 1867 he went to Nicaragua, where he became attached to the staff of the Javan Mining Company as technical officer. After visiting Costa Rica, Veragua, Panama, and the United States, Professor Tate was engaged to proceed to Guyana, in Venezuela, to survey and report upon certain mineral properties in the Caral goldfield. When he had completed this work he returned to England, and was employed as geological surveyor and lecturer on scientific subjects until 1871. In that year he was engaged by Messrs. Pease to organise and conduct mining schools for the workmen employed in their coal and iron mines in Durham and North Yorkshire. In 1874 the London Geological Society honoured him by making him the recipient of the balance of the proceeds of the "Murchison Fund" as a testimonial of the value of his palaeontological researches, especially in relation to the fauna of the lias.

In 1875 Mr. Tate accepted an appointment as Elder professor of natural science at the Adelaide University, and performed the duties pertaining to that post with exceptional ability. He did not allow his professional duties to absorb the whole of his energies, and for many years he took an active part in all movements which had for their object the advancement of natural science. He was one of the founders of the Adelaide Philosophical Society, and also assisted in the formation of the Royal Society of South Australia, of which he was the first president. When the Association for the Advancement of Science was inaugurated in Sydney in 1888 Professor Tate was elected president of the biological section. In opening the proceedings of the section he delivered an able address. His claims as a scientific worker were recognised by the London Linnean Society, and he was elected an associate and fellow of that body in 1897, and 1893 respectively. Other scientific societies and associations also honoured him in a similar manner. He was a fellow of the Geological Society of London, a corresponding member of the Linnæan Society of New South Wales, and also of the Royal Society of Tasmania, the Academy of Sciences, Philadelphia, the Microscopical Society, Melbourne, and of the Victorian Field Naturalists' Club. He was an honorary member of the Royal Geographical Society of New South Wales, of the Royal Field Club, and

of the Philosophical Society, Whiting. He was one of the inaugurators of the Field Naturalists' section of the Royal Society of South Australia, and manifested a great interest in the establishment and progress of scientific associations of all kinds throughout the state. He travelled extensively for the purpose of collecting information and reporting upon the botanical and mineralogical features of South Australia, and contributed many valuable papers upon these subjects to the literature of science.

In 1882 Professor Tate accompanied a Parliamentary party to the Northern Territory, and furnished reports on the mineralogy and to some extent the botany of the interior. He was appointed president of the convention which was held in Adelaide under the auspices of the Association for the Advancement of Science in September, 1893. On the opening day of the congress he delivered an exhaustive address upon "A Century of Geological Progress." The range of Professor Tate's studies was remarkably wide. He had in turn investigated botany, entomology, geology, ornithology, mineralogy, etymology, conchology, and zoology. For many years the professor had a farm property near Nairne, where he spent his leisure hours studying and working in the garden. He had a wattle plantation and a walnut grove, both of which returned a fair amount for the labour and trouble expended on them. In later years, however, he deserted the rural homestead, and became an orchardist on the plains. When Mr. E. G. B. Ebdy retired from the Government service Mr. Tate bought his beautifully-situated orangery at Salisbury, with the house and other property, and spent his spare time there. The orangery was managed by one of his sons, who studied at the Agricultural College.

Not the least important of the late professor's labours were his contributions to scientific literature. For nearly forty years he had been recognised as a capable writer on botany, zoology, and mineralogy, and his articles in the magazines of the learned societies in Europe and Australasia would, if collected, fill several volumes. Before he left England for South Australia he had devoted much attention to the study of obscure subjects, such as the liassic strata of Belfast, the plants of the Shetlands, and the fossiliferous remains of British rocks, and he prepared treatises upon each of these branches of science. The work by which he was best known at that time, however, was his paper on "Recently discovered shells, living and fossil," which appeared as an appendix to Woodward's "Manual of Mollusca." In later years he published an admirable "Handbook of the Flora of Extra-Tropical South Australia." He was also joint author with Mr. J. F. Blake, M.A., F.G.S., of a work on "Yorkshire lias." The deceased professor took

a deep interest in educational subjects. He was a member of the Public Library Board, and also had for a long time a seat in the council of the School of Mines. Professor Tate was married twice, and his second wife survives him with the following children:—Miss Tate and Messrs. E. Tate, of Salisbury, and A. R. Tate. The children of the first wife who are living are Mrs. J. H. Newman, of Prospect; Mrs. J. McLeod, of the Semaphore; and Mr. Ralph Tate.

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THE LATE PROFESSOR TATE.

After a somewhat protracted period of severe suffering Professor Tate died last night, and his death was marked by a pathetic coincidence. The sense of impending dissolution had oppressed him for months; and, as the paroxysms of pain incidental to the heart disease from which he suffered increased in frequency and violence, he accepted them as warnings, and gradually freed himself, one by one, from the duties of the important positions which he had filled so long and so capably. His final action in this connection was to write to the Public Library Board, which yesterday afternoon held the last meeting of its year of appointment, intimating that on account of illness he did not intend to seek re-election as a representative of the Royal Society on the body. While his fellow members were considering this sad epistle, and were giving directions for a reply conveying their thanks for his valuable services on behalf particularly of the museum, the lifelight of the intended recipient of their graceful acknowledgments was fast flickering out; and so Professor Tate was not privileged to enjoy the gratification of receiving the gush of praise to which his labours had entitled him from those whose opinions he held in high esteem. During the last year or two he had been the subject of sorrowful experiences, which had a mellowing effect upon him. He bore the burden of his grief bravely and patiently, and awaited with philosophic resignation that closing scene of his earthly career which his medical advisers assured him could not be long delayed.

His strong individuality and full confidence in the rightness of his own views may have induced a tendency on the part of others working in similar fields of learning to discount some of his discoveries and theories; but not one of his critics ever ventured to question his great ability, or his unwavering

and tenor of the unflinching courage with which he fought for his convictions. He had travelled in many lands, and had undergone unusual vicissitudes; and he was gifted more than most observers with "the seeing eye and the comprehensive mind." Into his comparatively short life he crowded an immense mass of work; and, beginning in early youth, enriched the literature of science by almost innumerable contributions, some of which were of conspicuous merit. The titular distinctions which were conferred upon him by various learned societies were no mere honorary preferences, but well earned rewards of attainment. His association for more than a quarter of a century with the Adelaide University constituted only one of his many claims upon the gratitude of the community; and his death has left in the scientific circle of this state a vacancy which will not be easily filled.

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THE LATE PROFESSOR TATE.

To his many friends and acquaintances, and their number was legion, the announcement of the death of Professor Tate, which it is our sorrowful duty to make to-day, will not come unexpectedly. It is true that he has left us at an age which falls considerably short of the allotted span of human life. For many months, however, his health had been failing, and he seems never quite to have recovered from the shock he sustained by the loss of one of his sons who shared his scientific tastes, and whose career was abruptly closed, as so many promising lives have been, by an attack of typhoid, in one of the mining districts of Western Australia. But the catastrophe which has now deprived the State of a valued citizen, and science of a devoted servant, was doubtless inevitable, for the constitution must have been robust indeed which could have survived the complication of maladies which sapped the vitality of Professor Tate. His death at the age of 60 may fairly be spoken of as premature. Yet he contrived in his busy life to get through an enormous mass of useful work, and to secure a distinguished place among Australian savants. He was indeed known by his writings outside the limits of the Continent, and had earned the right to be regarded as a sound authority on his favorite subject, geology, long before his appointment over a quarter of a century ago to the Elder Chair of Natural Sciences at the Adelaide University. The secret of his great success, as of all great success, was the closeness and intensity of his devotion to the work entrusted to him. This feeling did not appear to have been inspired so much by a mere sense of duty as by the keenness and all-absorbing character of his interest in the scientific studies—and they extended over a wide field—to which he devoted himself with untiring assiduity. He

might have got through his work creditably with a tithe of the activity he displayed in all matters scientific. But his interest in geology, botany, conchology, and other branches of research was eager and incessant, and engrossed his whole being. He had the scientific history of South Australia at his fingers' ends. He knew his Bora by heart. He had mastered its geological features both comprehensively and to the minutest detail, and the State was greatly enriched by his reports on its mineral resources, more especially in the Northern Territory, which he visited some years ago, and of which, from this standpoint, he formed the highest opinion. It is difficult indeed to find words to express the loss the State suffers by his death, and we shall not attempt to voice the sentiment of profound regret his disappearance will inspire among the many outside the family circle who will feel his decease almost as a personal bereavement. Single-minded as Professor Tate was in his devotion to his duty, he yet found many opportunities of exhibiting those social qualities which secured for him, as they do for all who have the good fortune to possess them, honor, love, and troops of friends.